

## **GLASS LID**

### **CROSS-REFERENCE TO RELATED APPLICATIONS**

**[0001]** This application relates to U.S. Provisional Patent Application No. 60/509,938, filed on October 10, 2003, the contents of which are hereby incorporated by reference herein in their entirety.

### **FIELD OF THE INVENTION**

**[0002]** The present invention relates to a threaded assembly system and more particularly, to a molded threaded post configuration that engages an internally threaded object.

### **BACKGROUND OF THE INVENTION**

**[0003]** Prior art methods for making glass knob/lid configurations typically involve either the use of sag glass and a mechanical means for attaching a knob to the lid, or the use of pressed glass that has a glass knob directly molded into the lid. However, there are problems with these conventional lids. For example, the sag glass lid often comprises a centrally located hole through which a screw is inserted that affixes the knob to the lid. Because the underside of the lid has a mechanical fastener, it is not a smooth surface and therefore it is difficult to clean.

**[0004]** Furthermore, the opening in a typical sag glass lid is relatively small so washers have to be used in order to distribute the force over a larger area. Such a construction, however, is not economical for entry-level products because of the additional cost associated with shipping and labor in assembling these parts.

**[0005]** Likewise, a conventional pressed glass lid is also problematic. Although a conventional pressed glass lid is more economically feasible than a sag glass lid, and the risk of food contamination from hard to clean surfaces is reduced in a pressed glass lid, the incidence of burn injury from such a lid is greater.

**[0006]** Accordingly, there is a need in the art for a method of attaching any knob to a glass lid without a screw or other fastener. Such a lid configuration would be less expensive and easier to clean, and reduce the risk of a burn injury.

## SUMMARY OF THE INVENTION

**[0007]** The present invention relates to a threaded post system, preferably a threaded-lock connector assembly comprising a molded glass surface portion having an externally threaded post disposed on the surface portion, the threaded post being formed integrally with the surface, and an engagement piece comprising an internally threaded channel that has a diameter that is greater than the diameter of the threaded post. In one embodiment, the externally threaded post is a solid. In another embodiment, the threaded post is a screw threaded post and the internally threaded channel is a screw threaded channel.

**[0008]** Another aspect of the present invention relates to a molded glass lid comprising a surface portion and an externally threaded post disposed on the surface portion, the threaded post being formed integrally with the surface portion. Preferably, the externally threaded post is a solid and is disposed on a center position of the surface portion. In one embodiment, the molded glass lid further comprises an internally threaded knob having an internal diameter that is greater than the diameter of the threaded post. Preferably, the threaded post is a screw threaded post and the internally threaded knob is a screw threaded knob.

**[0009]** Yet another aspect of the instant invention relates to a candle holder that comprises the threaded lock connector assembly described herein, wherein the molded glass surface portion is a molded glass surface in the general form of a conical body. In a preferred embodiment, the engagement piece of the threaded lock connector assembly is a base.

**[0010]** The present invention also describes a container comprising the threaded lock connector assembly disclosed herein. Preferably, the molded glass surface portion is a drinking cup. Also preferred, the engagement piece of the threaded assembly is a base and more preferably, a base pedestal. The base pedestal may consist of an aluminum base pedestal, a wooden base pedestal, a glass base pedestal or a metal base pedestal. In one embodiment, the container comprises at least one sleeve that surrounds the threaded post and threaded channel.

**[0011]** These and other features, aspects, and advantages of the present invention will become apparent from the following description, appended claims, and the accompanying exemplary embodiments shown in the drawings, which are briefly described below.

[0012] It is to be understood that both the foregoing general description and the following detailed description are exemplary and exemplary only, and are not restrictive of the invention as claimed.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0013] In the drawings:

[0014] Figure 1 is a cross-sectional view of a prior art sag glass lid.

[0015] Figure 2 is a perspective view of a molded glass lid according to a first embodiment of the present invention.

[0016] Figure 3 is an exploded view of the molded glass lid of Figure 2.

[0017] Figure 4 is a side view of the molded glass lid of Figure 2.

[0018] Figure 5 is another perspective view of a molded glass lid of Figure 2.

[0019] Figure 6 is a perspective view of a votive candle according to the present invention.

[0020] Figure 7 is a perspective view of a torch according to the present invention.

[0021] Figure 8 is a perspective view of a drinking glass according to the present invention.

### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS**

[0022] Reference will now be made in detail to presently preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings.

[0023] Figure 1 shows a prior art lid 1 made of sag glass that has an opening 6 cut into it for attaching a knob 8. A stainless steel screw 2, a stainless steel washer 4 and a rubber washer 5 are placed through the opening 6 from the underside of the lid 1.

[0024] Figures 2 to 5 show a first preferred embodiment of a molded glass lid 16 according to the present invention. In this embodiment, the molded glass lid 16 has an exterior surface portion 18 and an externally threaded post 10 disposed on said surface portion 18, threaded post 10 being formed integrally with surface portion 18. It is also preferred that the externally threaded post 10 is disposed on a center position of the exterior surface portion 18.

**[0025]** The molded glass lid 16 preferably further comprises an internally threaded knob 12 having an internal diameter that is greater than the diameter of the externally threaded post 10. The knob 12 can be made of glass, metal (such as chrome), plastic, wood, or other thermally insulated material. Glue or another adhesive may be applied to the internal threads.

**[0026]** The externally threaded post 10 is preferably a solid. In other words, the threaded post 10 preferably does not have an opening that faces the internally threaded knob 12. However, the externally threaded post 10 may be hollow.

**[0027]** While it is preferred that the threaded post 10 is a screw threaded post 10, and the internally threaded knob 12 is a screw threaded knob 12, other thread assembly systems are contemplated. For example, twist-lock, cam-lock and snap-on designs are also suitable for use in the present invention.

**[0028]** The molded glass lid 16 can be used to cover a casserole dish 22, a cake plate 38 or other cookware, bakeware, serving dishes or storage containers, as can be seen in Figures 2 and 5, respectively.

**[0029]** Figure 6 shows a second preferred embodiment of the present invention in which a threaded lock connector assembly is provided. This system preferably comprises a molded glass surface portion 18 having an externally threaded post 10 with threads 11 disposed on said surface portion 18, the threaded post 10 being formed integrally with the surface portion 18, and an engagement piece 24A comprising an internally threaded channel 26 that has a diameter that is greater than the diameter of the threaded post 10.

**[0030]** In this embodiment, the externally threaded post 10 is preferably a solid and the threaded post 10 is a screw threaded post and the internally threaded channel 26 is a screw threaded channel.

**[0031]** The molded glass surface may be in the general form of a conical body 34. Preferably, the molded glass surface in the general form of a conical body 34 holds a votive candle 37.

**[0032]** Of course, it is also contemplated that the candle holder of the present invention can be attached to a wide variety of engagement pieces, including the engagement

piece 24 of Figure 6. Indeed, the engagement piece can be a wide variety of bases 24A, 24B and hangers, as shown in Figures 5 and 6.

**[0033]** Wall sconce candleholders and wall mounted candles secured to a mounting surface by the threaded lock connector assembly are also described herein. A filled candle with the inventive assembly system would prevent the candle from being knocked off its mounting surface. Similarly, outdoor tiki candle holders 50 that have a threaded post 10 allows for a secure attaching system, as can be seen in Figure 7. The user can then remove the candle holder 50 from the pole 55 for cleaning, storage and replacement.

**[0034]** Figure 8 shows another embodiment of the present invention. This embodiment is similar to the second embodiment described herein except the molded glass surface in the general form of a conical body 34 is a drinking cup 30. Optionally, the container 28 has a sleeve 32 that encloses the externally threaded post 10 and internally threaded channel 26. However, the molded glass surface in the general form of a conical body 34 may be a glassware bowl that can engage any type of stand or base. This allows for vast customization, as well as the benefit of easy replacement if it breaks. Furthermore, the removable stand or base 24A, 24B allows the user to easily store and clean the drinking cup 30, as shown in Figures 5 and 6.

**[0035]** Another embodiment of the present invention is a plate that comprises the threaded lock connector assembly described herein, as seen in Figure 5. For example, a cake plate 38 can have the externally threaded post 10 formed integrally with the plate 38, and an engagement piece 24 comprising an internally threaded channel 26 that has a diameter that is greater than the diameter of the threaded post 10. The plate 38 can then be screwed into a base 24A, 24B.

**[0036]** Currently, the best way to manufacture the threaded lock connector assembly is to use a press operation to form the threaded post. The threaded post may also be manufactured by a pressed and blown process. The threaded lock connector assembly may also include gaskets, adhesives and sealants.

**[0037]** A threaded-lock assembly system made of molded glass permits the attachment of an internally threaded knob to a lid without the use of a mechanical fastener. Thus, the need for a hole is eliminated and the cost of lid assembly is reduced. Also, a lid that has a uniform and smooth surface is easier to clean and structurally stronger than a lid

with an opening. The threaded assembly system also allows for greater customization of the lid with any knob, such as a knob made of thermally insulated material.

**[0038]** The threaded lock assembly system described herein can also be used to put other items together, such as votive candle holders, containers, tiered stands, glassware bowls and plates, cake domes, outdoor Tiki candle holders and wall sconce candle holders.

**[0039]** Of course, the present invention can be practiced by combining one or more of the features of one of the embodiments with one or more of the features of the other embodiment.

**[0040]** It will be appreciated that various embodiments are attainable. One skilled in the art will understand that the present invention can be practiced by combining one or more of the features of one of the embodiments with one or more of the features of a different embodiment.

**[0041]** Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered exemplary only.